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## SCIENCE:

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THE ALPHABETS OF THE BERBERS.<sup>1</sup>

BY D. G. BRINTON, M.D., LL.D.

THE Berber tribes are called by some writers collectively Hamites, and by others Proto-Semites. From the dawn of history they have occupied most of the area between the Nile Valley and the Atlantic Ocean north of the Soudan. They have, also, linguistic kinsfolk in Abyssinia and in adjacent parts of East Africa. The ancient Ethiopians were of their lineage; Timbuctoo was founded by one of their chieftains, and the extinct Guanches of the Canary Islands were members of their stock. To them belonged the classical Libyans, Numidians, Mauritanians, and Getulians, and in later times petty tribes innumerable, the most prominent of which to-day are the Rifians of Morocco, the Kabyles of Algeria, the Touaregs or Tamachek of the Sahara, the Mzabis, etc.

During two short visits to North Africa in the years 1888 and 1889, I became much interested in the ethnology of this stock, which offers many most interesting problems. The one to which I shall confine myself at present is its methods of writing.

The Berber hordes of to-day, with one exception, employ the Arabic alphabet, though it fails to render some of the sounds with precision. The exception is that of the Touaregs of the Sahara. They employ an alphabet of their own, of great antiquity and disputed origin. They call it *tifinar*, which is a plural from the singular *tafinek*. As in the Berber dialects, the radicals are single or small groups of consonants, invariable, and inflected by vowel changes, we have in *tafinek* the quadrilateral radical *t-f-n-k*, as is held by Rinn; or, if the initial *t* be regarded as a neuter prefix, there will be the trilateral root *f-n-k*. The primitive meaning of this root is a sign, mark, or token by which a place or thing is recognized. Peculiarly-shaped stones or ridges, which serve as landmarks, are called *efnagha* (Barth).

Strictly speaking, the word *tifinar* applies only to those letters of the alphabet which can be represented by straight lines; while a number of others, expressed by dots, receive the name *tiddebakin* (Rinn). All letters, whether simple or compound, can be and usually are written by one or other of these methods, straight lines or dots, as is shown by the alphabet presented, from Hanoteau's *Grammaire Tamachek*. The cursive script, however, permits the use of curved variants in some cases, all of which are shown on the alphabet I submit.

The Touareg alphabet is far from systematic. The order in which the letters are arranged is purely arbitrary; there is considerable difference in the forms of letters in different tribes; there are no vowel-points like those in modern Hebrew, and no accessory signs to represent pure vowels. What is worse, there is no rule as to whether the script should be read from left to right or from right to left, from above downward or from below upward. The assertions made to the contrary by Hanoteau and Halévy are disproved by the documents published by Rinn, which

I show. They were written by native Touaregs to native Touaregs. The writer sometimes begins at a corner of the page, and proceeds from right to left or from left to right as he pleases; arrived at the further margin, he turns his sheet, so as to go perpendicularly or in any other way that suits him. As the words are frequently not separated, as punctuation and capital letters are unknown, and as the sequence of the lines is not fixed, it is no easy matter to decipher a Touareg manuscript. When a native undertakes the task, he begins by spelling the consonants aloud, in a chanting voice, applying to them successively the various vowels, until he finds the words which make sense (Hanoteau).

Imperfect as this alphabet seems, it is in very extensive use among the Touaregs, both men and women. Barth found that his young camel-driver could read it with ease. Captain Bissuel writes: "A de très rares exceptions, près tous les Touaregs de l'ouest, hommes et femmes, savent lire et écrire." Duveyrier makes a similar statement of the Touaregs of the north.

Most writers, one following the other, have traced the Touareg alphabet back to the Carthaginians, and have sought to identify its letters with those of the Punic writing.

Its history, however, is by no means so easy to unravel. That certain of its letters are identical with the Semitic alphabets is unquestioned; but some of them are not; and those that are alike, may they not be mere loans, or even independent derivatives, from some one common source?

The material to solve these problems must be drawn from ancient inscriptions. These are by no means lacking, and prove that an old Berber alphabet was in use in Northern Africa long before the Christian era; yes, in the opinion of some archæologists, as Collignon and Rinn, long before the founding of Carthage.

These inscriptions are of two classes, the one carved on dressed stones, such as grave and memorial tablets; the other on native rocks, *in situ*, where a smooth surface offered a favorable exposure.

A large number of the former were copied and published by General Faidherbe and have been studied by Professor Halévy. The latter explains most of the letters by the Punic alphabet, and presents transliterations and renderings of the epitaphs. His identifications, however, have not satisfied later students. I find, for instance, that while Halévy's "Essai d'Epigraphie Libyque" was published in 1875, René Basset, probably the most thorough Berber scholar living, writes in 1887 in his "Grammaire Kabyle": "Le déchiffrement de ces inscriptions est encore aujourd'hui sujet à contestation, au moins pour le valeur de plusieurs lettres."

This difficulty very much increases when we come to the other class of inscriptions — those engraved on the living rocks. The mortuary epitaphs collected by Faidherbe may be referred with probability to a period two or three centuries before Christ; but the rupestrian writing is of much more uncertain age. Some of it has the patine and other attributes of high antiquity; in other instances it is evidently recent. Examples of it are found in abundance on both slopes of the Atlas range from Morocco to the Libyan Plateau. Unquestionable instances have been reported from the Canary Islands by Dr. Verneau; Barth found them south of Fezzan; Captain Bernard copied some in southern Algiers; last year M. Flamand described a number of stations in southern Oran; Dr. Hamy has made an instructive study of them; and a number of other travellers have added to our knowledge about them. They are often carefully and cleanly cut into the faces of hard rocks, and are thus calculated to resist the elements for many generations.

What is noteworthy about the oldest types of these rock-writings is this: that while they contain some letters which are common to the Touareg, Libyan, and Punic alphabets, they also present a certain number which are not, and which cannot be explained by them. Thus, in the most recent article on the subject, published last year in *L'Anthropologie*, M. Flamand writes that these glyphs show "bien caractérisées, des lettres Libyco-Berberes, et aussi des signes qu'il a été jusqu'ici impossible de comparer avec aucun de ces alphabets." The copies of

<sup>1</sup> Read at a meeting of the Oriental Club of Philadelphia, Feb. 9. (See *Science*, Nov. 18, 1892, p. 290.)

these inscriptions which I show will give an idea of some of these unknown signs. They are three in number, and fair examples of hundreds to be seen in the localities referred to. One was copied by Barth at a place southwest of Fezzan; the second by Captain Bernard, near Laghouat; the third by Captain Boucher, near Figuig. While each presents letters identical with some in the Touareg alphabet, or in the Numidian mortuary inscriptions, the majority of the letters belong to neither class.

It is the opinion of some careful students, therefore, and it seems evident, that for a portion of the ancient Libyan alphabet we must look elsewhere than to a Semitic source. The question is a new one; but there can scarcely be more than one answer to it. We must look directly to Egypt, whence the Semitic alphabets themselves must finally trace their origin. Nor does such an answer present the least historic difficulty. Earlier than the twelfth century, B.C., there were direct and much-travelled caravan routes from the heart of the Berber country into Egypt. "I have not the slightest doubt," writes Barth, "that the Imoshagh (Touaregs) are represented in the ancient sculptures of Egypt as the Tamhu and the Mashawash." We are well aware that thousands of Berber soldiers were enlisted in the Egyptian armies in the Ramesside epoch. The high culture they possessed is attested by the catalogue of spoils in the inscription of Merenptah. Unquestionably they became familiar with the various methods of writing in vogue in Egypt at that period.

In his latest work, Mr. Flinders Petrie maintains that the letters of the Phoenician alphabet were derived directly from Egypt; it is quite likely that one or more of the earliest Berber alphabets were also derived directly from the same venerable seat of culture, adopting, in part, signs identical, in part, diverse from the multiformal Phoenician alphabets of the earliest epochs. Intercourse with the Semitic traders and colonists led to a greater or less unification of the methods of writing, as has occurred in so many other instances; so that the Libyan alphabet of the third century, B.C., was easily enough mistaken for a daughter, instead of a sister, of that in use by the Carthaginians. But they never reached a complete identity, and as the farther we go back, the greater seems the diversity, the theory of an independent origin appears to be alone that which will satisfy the facts in the case; and this theory has in itself a high historic probability.

The principal works to be consulted, copies of all of which from my own library I lay before you, are the following:—

Faidherbe, "Collection Complète des Inscriptions Numidiennes."

Hanoteau, "Essai de Grammaire Kabyle."

Hanoteau, "Essai de Grammaire de la Langue Tamachek."

Halévy, "Essai d'Epigraphie Libyque."

Bissuel, "Les Touaregs de l'Ouest."

Basset, "Notes de Lexicographie Berbère."

Rinn, "Les Origines Berbères."

Numerous articles on the rupestrian inscriptions are scattered through the *Revue d'Ethnographie, L'Anthropologie*, etc. As the subject is one, I believe, entirely new to American Orientalists, and as it may possibly prove of considerable significance in the history of the development of Mediterranean civilization, this brief presentation of it will, I trust, lead to further researches.

#### LETTERS TO THE EDITOR.

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#### The Trinomial Question in Nomenclature.

I WOULD like to say just a word in relation to the article by Mr. C. Michener of San Francisco, which appeared in the Oct. 28 number of *Science*.

Whatever may be the views of others on this point, I maintain that there is an ethical side in nomenclature. My article was written largely from that point of view, the matter of "convenience" is of secondary importance.

When an author names and gives a recognizable description of a species, the latter becomes in a certain measure his individual property. (I feel safe in saying that this view is held by many others beside myself.) A later author who attempts to claim this species violates a law of ethics.

Mr. Michener's whole article hinges on this one point: Is there an ethical side in nomenclature? I leave my critics to answer this question. If there is, then the question arises: Shall justice be sacrificed to convenience?

Considering the matter of convenience, there is no point gained, in pursuing the course supported in the above article, which is important enough to warrant this violation of rights. Of the two evils, inconvenience and injustice, we should choose the lesser. We should put up with the inconvenience, which is at best slight. Taking the example cited: If H. and A. have described five species by the name of *malachroides*, then look each one up. It is safe to say that the necessity for doing this will not occur once in ten times. Again, let him who desires to find the characters of *H. malachroides*, H. and A., look at some later work, Greene's for instance, or any other. He will probably find, with little trouble, the genus *Hesperaleea*. If it is contained in some recent paper and he cannot find it, he is not conversant with the literature on the subject; and the sooner he becomes conversant, the better for his work.

The amount of truth which a name conveys depends entirely upon our understanding of what it represents. It is accepted by the majority of the scientific public (I refer especially to zoologists) that the third term of the trinomial represents the founder of the species. If it were understood to represent the reviser who placed the species in its present generic position, of course Mr. Michener's argument would be valid. I know that the view here opposed is the one more generally held among botanists. But I believe it is growing in disapprobation. The opposite view is almost universally adopted by zoologists, and is, I believe, the rational and just one.

C. H. TYLER TOWNSEND.

Agricultural College, Las Cruces, N. M., Nov. 5.

#### Notes on the Fauna of the Dry Regions.

IN *Science* for Dec. 23, 1892, my friend, Mr. A. Stephens, records an instance of a captive pocket-mouse (*Perognathus*) living for over two years without water or any food from which any amount of moisture could have been obtained; and, from the fact of water having been offered, it is plain that its abstinence was entirely voluntary.

That many birds and mammals inhabiting the desert regions of the southwest live for many months without any other moisture than that obtained from the food they eat, is well known to those who have studied zoölogy in these regions. And the study of the various sources from which the fauna of the arid plains of New Mexico and Arizona draws its supply of moisture offers a very inviting field.

In the low deserts of these territories rain seldom falls after March or before September. Often nine or ten months pass by without rain in sufficient quantities to form pools or streams where water could be obtained by the birds or mammals of these sandy wastes.

During the summer of 1886 I made my headquarters at a mining camp near the southwestern corner of New Mexico, in the midst of the dry regions. Water could only be obtained from a small spring ten miles west of camp, and no rain fell after my arrival, on Feb. 28, until some time about the last of August.

Birds and mammals were quite plentiful about my camp, many of the former nesting and raising broods of young, which reached maturity and, in some cases, migrated before they made the acquaintance of a drop of water.

In the case of the insectivorous species some moisture was obtained from their food, which was more or less juicy. But the sparrows and seed-eating species must have thought it a "long time between drinks," as their food was of the dryest possible kind.

During the fall, after the various species of cacti had ripened their fruits, I frequently found them torn open by mocking-birds